

**REMARKS**

The Examiner is thanked for the thorough examination of the present application. The Office Action, however, tentatively rejected all claims 1-9.

In this Amendment, independent claims 1 and 6 have been amended to define certain features and subject matter of embodiments more specifically and to incorporate features embodied in claims 3 and 8, respectively (as well as additional features). Therefore, claim 3 and 8 have been correspondingly canceled, and claims 2, 4, 7, and 9 have been amended to make these claims consistent with the above amendments, in terms of meaning and dependency. In addition, claims 10-18 have been added to further protect a subject matter of embodiments supported by the specification, wherein claim 10 is an independent claim from which claims 11-18 depend. These claims are supported by the specification and drawings as filed, for example, paragraphs [0017]-[0020] and FIG. 3. Consequently, the addition of these claims adds no new matter to the application.

After entry of the foregoing amendments, claims 1, 2, 4-7, and 9-18 are pending, and claims 1, 6, and 10 are the independent claims. After entry of the foregoing amendments, all claims are in condition for allowance, and the Examiner is respectfully requested to reconsider and withdraw all rejections.

Turning now to the substantive rejections set forth in the Office Action, the Office Action rejected claims 1-9 under 35 U.S.C. § 103(a) as allegedly unpatentable over Maikeru et al. (Maikeru) (Pub. No.: 06-301364) and further in view of Kouichi (Pub. No.: 11-146202). Due to the cancellation of claims 3 and 8, as described above, the

rejection of claims 3 and 8 are rendered moot. Since claims 1 and 6 have been amended to define subject matter of the claimed embodiments more specifically, reconsideration of the patentability of the claims rejected is respectfully requested.

As amended herein, claim 1 recites:

1. An error diffusion method applied to halftone processing for image data, the image data comprising a plurality of pixels, the method comprising the steps of:  
dividing the image data into a plurality of image blocks;  
***for each of the image blocks, selecting one of the pixels belonging to the image block being processed as a target pixel and as a starting pixel from which an error diffusion calculation is to be executed in a direction across the image block, wherein the target pixel is located on a boundary of the image block;***  
***assigning a predicted error to the target pixel, wherein the predicted error is determined according to at least an error diffused from a last pixel which is adjacent to the target pixel, wherein the last pixel and the target pixel do not belong to the same image block; and***  
***executing the error diffusion calculation on the rest of the pixels of the image blocks in the direction across the image block according to the predicted error of the target pixels of the image blocks.***

(*Emphasis added*). Applicant submits that claim 1 patently defines over the cited art for at least the reasons that the cited art fails to properly teach or disclose the features emphasized above.

In rejecting claim 1, the Office Action firstly pointed to Maikeru (paragraphs 0001 and 0017) as disclosing two steps of claim 1. The Office Action then acknowledged that Maikeru differs from claim 1, in that he does not teach assigning a predicted error to the target pixel; and executing the error diffusion method on the rest of the pixels of the image blocks according to the predicted error of the target pixels of the image blocks. To resolve the deficiency of Maikeru, the Office Action asserted that Kouichi (paragraphs 0011, 0012) discloses assigning a predicted error to the target pixel; and

executing the error diffusion method on the rest of the pixels of the image blocks according to the predicted error of the target pixels of the image blocks. The Office Action concluded that it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Maikeru by the teaching of Kouichi (paragraphs 0011, 0012) to increase processing speed since Maikeru and Kouichi both are parallel processing of error diffusion.

However, in addition to the features that the Office Action acknowledged as being missing from Maikeru, Maikeru also fails to disclose or even suggest “for each of the image blocks, selecting one of the pixels belonging to the image block being processed as a target pixel and as a starting pixel from which an error diffusion calculation is to be executed in a direction across the image block, wherein the target pixel is located on a boundary of the image block,” as expressly recited in the amended claim 1. Regarding these features, the cited paragraphs of Maikeru do not mention any step of selecting, as required by the amended claim 1.

Kouichi also fails to disclose or suggest such a step of selecting, as recited in amended claim 1. Further, Kouichi does not disclose “assigning a predicted error to the target pixel, wherein the predicted error is determined according to at least an error diffused from a last pixel which is adjacent to the target pixel, wherein the last pixel and the target pixel do not belong to the same image block; and executing the error diffusion calculation on the rest of the pixels of the image blocks in the direction across the image block according to the predicted error of the target pixels of the image blocks,” as explicitly recited in amended claim 1.

Thus, the proposed combination fails to disclose all features of the amended claim 1. For at least the foregoing reasons, it is respectfully submitted that the rejection of claim 1 should be withdrawn. As claims 2, 4, and 5, depend from claim 1, these claims patently define over the cited art for at least the same reasons.

Independent claim 6, as amended herein, now recites:

6. An error diffusion method applied to halftone processing for image data, the error prediction method comprising the steps of:

dividing the image data into a plurality of image blocks, wherein each of the image blocks comprises a plurality of image rows, each of which comprises a plurality of pixels, and each of the pixels at least outputs an error;

***for each of the image blocks, selecting one of the pixels belonging to one of the image rows of the image block being processed as a target pixel and as a starting pixel from which an error diffusion calculation is to be executed in a direction along the one of the image rows, wherein the target pixel is located on a boundary of the image block;***

***assigning a predicted error of the target pixel, wherein the predicted error is determined according to at least an error diffused from a last pixel which is adjacent to the target pixel, wherein the last pixel and the target pixel do not belong to the same image block; and***

***executing the error diffusion calculation on the rest of the pixels of the one of the image rows of the image blocks in the direction along the one of the image rows according to the predicted error of the target pixels of the image blocks.***

(*Emphasis added*). Applicant submits that claim 6 patently defines over the cited art for at least the reasons that the cited art fails to properly teach or disclose the features emphasized above.

It is noticed that claim 6 has been rejected under the same rationale of that used to reject claim 1. However, in addition to the features that the Office Action acknowledged as missing from Maikeru, Maikeru fails to disclose or even suggest “for each of the image blocks, selecting one of the pixels belonging to one of the image rows

of the image block being processed as a target pixel and as a starting pixel from which an error diffusion calculation is to be executed in a direction along the one of the image rows, wherein the target pixel is located on a boundary of the image block,” as recited in the amended claim 6. Regarding these features, the cited paragraphs of Maikeru do not mention any step of selecting, as required by the amended claim 6. For at least this reason, the rejection of claim 6 should be withdrawn.

In addition, Kouichi also fails to disclose or suggest such step of selecting, as recited in amended claim 6. Further, Kouichi does not disclose “assigning a predicted error of the target pixel, wherein the predicted error is determined according to at least an error diffused from a last pixel which is adjacent to the target pixel, wherein the last pixel and the target pixel do not belong to the same image block; and executing the error diffusion calculation on the rest of the pixels of the one of the image rows of the image blocks in the direction along the one of the image rows according to the predicted error of the target pixels of the image blocks,” as expressly recited in the amended claim 6. For at least this additional reason, the rejection of claim 6 should be withdrawn.

Thus, the proposed combination fails to disclose all features of the amended claim 6. For at least the foregoing reasons, it is respectfully submitted that the rejection of claim 6 should be withdrawn. As claims 7 and 9 depend from claim 6, the rejections of these claims should be withdrawn for at least the same reasons.

New claims 10-18 have been added to further protect addition non-obvious embodiments of the present application, wherein claim 10 is an independent claim. It is submitted that the cited art fails to disclose or even suggest at least the features of

performing error diffusion of the image rows of the image block being processed in alternate directions, as required by claim 10. For at least this reason, it is respectfully submitted that claims 10, as well as its dependent claims 11-18, defines over the cited art.

All claims are believed to be in condition for allowance, and the Applicant respectfully requests the Examiner to pass this case to issuance. Should the Examiner have any questions regarding this response, the Examiner is invited to telephone the undersigned attorney at (770) 933-9500.

No fee is believed to be due in connection with this amendment and response to Office Action. If, however, any fee is believed to be due, you are hereby authorized to charge any such fee to deposit account No. 20-0778.

Respectfully submitted,

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